

REMARKS

INTRODUCTION

In accordance with the foregoing, no claims have been amended. Claims 1-12 and 14-18 are pending and under consideration.

CLAIM REJECTIONS

Claims 1-12 and 14-18 were rejected under 35 USC 103(a) as being unpatentable over Chapin (US 2003/0231328) (hereinafter "Chapin") in view of Minamizawa et al. (US 2002/0029314) (hereinafter "Minamizawa").

Claims 1-6

Claim 1 recites: "A printer to perform a printing operation by driving hardware provided thereto according to a printing command received from a user, comprising: a firmware unit to store function information of a plurality of printer models, supported by a common firmware, of the printer, and control the printer to selectively perform the function of one of the plurality of printer models which corresponds to a model index designated by a manufacturer as the printer is initialized, and wherein the common firmware is a multi-model firmware that can be used in the plurality of printer models."

As noted in the Office Action, Chapin does not discuss that the printer driver (firmware unit) is located or installed in the printer. Specifically, Chapin discloses a feature of selectively processing a printer suitable for printing job properties among a plurality of printers, but the present invention as recited in claim 1 discloses a method of supporting a series model in a printer. Thus, the present invention is distinct from Chapin.

Instead, the Office Action notes that Minamizawa shows this feature in paragraph [0058].

Minamizawa discusses that recently, a general use control board is mounted in each electronic device. The control board is produced to mount thereon a flash memory as a program memory device. Only a main program downloaded to the flash memory is changed according to the model type and to the target country. In more detail, a common boot loader program is prestored in the flash memory. The boot loader is the same for all the countries and for all the model types. The boot loader is used to download a main program especially for each country and for each model type into the flash memory. The electronic device thus mounted with the control board stored with the main program is treated as a corresponding model and shipped out to a corresponding country. Minamizawa, paragraph [0006].

Further in Minamizawa, Minamizawa discusses a data rewriting device having a rewritable nonvolatile memory including a control data storing region for storing control data such as a program and a variety of information for controlling operations of an electronic processing device; and a loader program storage region for storing loader program data for controlling load operations of the control data into the control data storing region during both initial load of the control data and update of the control data; reception means capable of receiving transmitted control data and loader program data transmitted from an external transmission device; mode setting means for setting a rewrite mode enabling rewrite of the transmitted loader program data; and rewrite means for, when the mode setting means sets the rewrite mode, rewriting the loader program storing region using the transmitted loader program data received by the reception means. Minamizawa, paragraph [0021].

Still further in Minamizawa, a flash memory 12 is configured from a boot loader area 30 and a main program area 40, and the main program area 40 includes a main program storage region 41; a password storage region 42; a completion mark storing region 43; a main program preparation time storage region 44; and a main program checksum storage region 45. The main program storage region 41 is for storing a main program for executing processes of FIG. 11. The password storage region 42 is for storing data of a password for distinguishing a model of the present multi-function device 10 and a target country to which the present multi-function device 10 should be shipped out. The completion mark storing region 43 is for storing a load completion mark for indicating completion of processes for loading the main program. The main program preparation time storage region 44 is for storing preparation time data indicating date and time when the main program has been produced. The main program checksum storage region 45 is for storing checksum data for the main program area 40. Minamizawa, paragraphs [0050] and [0051].

Further in Minamizawa, the multi-function device 10 having the above-described structure is manufactured and is downloaded with a main program. Minamizawa, paragraph [0058].

In addition, Minamizawa discloses a feature of determining whether to update a program by checking a password, but the present invention as recited in claim 1 relates to performing the function which corresponds to a model index designated by a manufacturer in firmware conditions supporting a multi-model pre-stored in a printer set. Thus, the present invention is different from Minamizawa.

It is respectfully noted that Minamizawa does not discuss either firmware or printer driver.

It is further respectfully noted that the main program 40 discussed in Minamizawa is stored in the flash memory 12. As is generally known, and is also discussed in the specification of the present application in paragraph [0004], firmware has an intermediate property between hardware and software, and refers to a program which permanently becomes a part of the device by being incorporated in a PROM (programmable read-only memory). Accordingly, reliance on the main program of Minamizawa to show the firmware of claim 1 is respectfully traversed.

As shown above, Minamizawa only refers to a “main program.” And of that main program, only a boot loader is installed therein, and the disclosure of Minamizawa is directed to effectively downloading the main program.

Accordingly, as Minamizawa does not discuss a print unit that initially includes a main program, print driver or firmware at all, it is difficult to realize how this reference teaches a printer that includes a common firmware which is a multi-model firmware that can be used in the plurality of printer models. To the contrary, Minamizawa discusses that a specific main program corresponding to the country of destination is later downloaded.

It is well settled that prior art is interpreted not to teach an invention particularly when stated objectives of the prior art reinforced this interpretation. See WMS Gaming Inc. v. International Game Tech., 184 F.3d 1339, 51, USPQ2d 1385 (Fed. Cir. 1999). In the present case, since an object of Minamizawa is to only include a boot loader, there is no teaching or motivation to modify Chapin or Minamizawa to arrive at a printer having a common firmware which is a multi-model firmware that can be used in the plurality of printer models as recited in claim 1.

These technical features of claim 1 provide that a plurality of series-models can be supported through a single firmware by adding a model index function and a model index command designating the function in the firmware of the printer, instead of separately developing a firmware for each of the series-models having similar functions. It is further respectfully submitted that this technical problem is not even addressed in Chapin or Minamizawa.

Claims 2-6 depend on claim 1 and are therefore believed to be allowable for at least the foregoing reason.

Withdrawal of the foregoing rejections is requested.

Claims 7-10

Claim 7 recites: "...inputting a model index designation command and storing the command in a file of a printer in which the common firmware is installed, during a manufacturing operation; confirming a model index designation command which designates a model index corresponding to one of the plurality of printer models on performing an initialization of the printer; extracting function information corresponding to the one of the plurality of printer models which is designated by the model index designation command; confirming a function of the designated model using the function information; and performing the function, and wherein the common firmware is a multi-model firmware that can be used in the plurality of printer models."

Similar to the argument for claim 1, it is respectfully submitted that these features are not obviated by Chapin and Minamizawa.

Claims 8-10 depend on claim 7 and are therefore believed to be allowable for at least the foregoing reason.

Withdrawal of the foregoing rejection is requested.

Claims 11 and 17

Claim 11 recites: "...wherein the common firmware is a multi-model firmware that can be used in the plurality of printer models."

Similar to the argument for claim 1, it is respectfully submitted that these features are not obviated by Chapin and Minamizawa.

Claim 17 depends on claim 11 and is therefore believed to be allowable for at least the foregoing reason.

Withdrawal of the foregoing rejection is requested.

Claims 12 and 14-16

Claim 12 recites: "...wherein the common firmware is a multi-model firmware that can be used in the plurality of printer models."

Similar to the argument for claim 1, it is respectfully submitted that these features are not obviated by Chapin and Minamizawa.

Claims 14-16 depend on claim 12 and are therefore believed to be allowable for at least the foregoing reason.

Withdrawal of the foregoing rejection is requested.

Claim 18

Claim 18 recites: "...storing function information of a plurality of printer models, supported by a common firmware, of the printer in the printer..."

Similar to the argument for claim 1, it is respectfully submitted that this feature is not obviated by Chapin and Minamizawa.

Withdrawal of the foregoing rejection is requested.

CONCLUSION

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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